

# Options for Enhancing Export Controls

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- P**olicy options for enhancing the effectiveness of nonproliferation export controls include measures to improve:
- processes for making lists of controlled items and buyers,
  - the administration of export license application evaluations and the enforcement of regulations,
  - the enforcement of laws and regulations, and
  - the degree of international cooperation on multilateral export controls.

## IMPROVED EXPORT CONTROL LIST-MAKING

### I Improve Information and Analysis

Formulating and reviewing the contents of export control lists involves identifying goods and technologies that could contribute to weapon programs as well as identifying programs and countries of concern.

Maintaining and strengthening intelligence collection and analysis capabilities are important to identify and track proliferation activities. The U.S. intelligence community has established an office for this purpose. To be most effective, however, intelligence analysts make full use of information available from other U.S. government agencies and from open sources. At the same time, a diverse array of officials and experts outside the intelligence community also plays a role in producing the export control lists of goods and target countries. The fullest possible cooperation among these players is essential for the government as a whole to develop the most effective policies. No **technical fixes can substitute for such cooperation**, but, if it exists, several options are available for bettering communication among policy-

*Since there are very few technologies useful to proliferant weapons programs that the United States produces uniquely, international/ cooperation among potential suppliers or transshippers is essential to effective export controls.*

makers and improving the base of information and analysis from which they arrive at their decisions.

**One option is to create a common database through which all the involved analysts share the widest possible range of information available.** The Department of Energy (DOE) is creating what might be a prototype for such a system in its “Proliferation Information Networked System” (PINS). PINS is intended first to assist DOE in carrying out its nuclear nonproliferation responsibilities within the government (both in policymaking and export license application reviews), but in principle the idea could be expanded beyond DOE and beyond a focus on nuclear nonproliferation alone. This classified computer network would permit full-text searches and retrievals of information and analyses about current and past export license actions, nuclear-weapon-related technologies, foreign countries and end users, national policies of both the United States and other governments, and international agreements and policies. This information should help analysts better identify countries of possible proliferation concern, the types of goods or technology that proliferant organizations may be trying to buy, and the international networks of supply that they may be using. Such analysis would be useful both in developing lists of countries and items to be controlled and in making decisions about whether to approve particular export license applications.

The DOE PINS is being designed to let users get access to multiple databases in multiple on-screen windows, comparing and synthesizing information quickly and easily. **Newer computers, with higher speed and more memory, allow consideration of new techniques for sifting and analyzing information.** For example, the Defense Department’s Advanced Research Projects Agency has been sponsoring research on new

ways of searching textual databases for all information relating to a particular subject, rather than requiring the user to discover the exact combination of keyword searches that will yield the results he or she wants. ]

In another example, Australian economist John Galloway has developed a system called “NET-MAP,” which lets users integrate and correlate data from many sources into a single graphic environment. It creates visual, color-coded representations of connections and patterns among people, organizations, or transactions.<sup>2</sup> The developer has licensed this technology to various companies for many purposes, but it appears to be particularly well suited to proliferation analysis. For example, data from export license approvals and denials, financial transactions, customs discoveries and investigations, insurance underwritings, the trade press, and intelligence sources might be combined to reveal the kinds of clandestine procurement networks Iraq used to supply its nuclear weapon program. **For such analysis to be most effective, the analysts should have access to the full range of information about all types of proliferation. Several of the countries suspected of trying to acquire one type of weapon of mass destruction also appear to be trying to acquire the others: they may try to use the same procurement systems.**

The technology exists to build an interagency network that would expand beyond the DOE PINS and beyond the nuclear nonproliferation mission. Still, those attempting to do so would have to overcome at least three hurdles. First, the rates of data flow would be high, so the agencies using the system would have to be connected by secure, high-capacity links, probably fiber optic cables. For example, the bandwidth (i.e., the amount of information that can be sent in a given

<sup>1</sup>For a press account of the ARPA research, see Michael W. Miller, “U.S. Spies Help Scientists pierce Data Jungle,” *Wall Street Journal*, July 27, 1993, pp. B 1 and B8.

<sup>2</sup>Citing this system as an example should not be taken as an OTA endorsement. See Clive Davidson, “What Your Database Hides Away,” *New Scientist*, Jan. 9, 1993, pp. 28-31. OTA was also briefed by a U.S. firm, ALTA Analytics, Inc., adapting NETMAP to various governmental and commercial tasks.

time) connecting the current experimental PINS sites is not great enough to allow the transmission of much image material from one site to another. The interconnections would not be technically challenging, but might be expensive.

A second hurdle is both bureaucratic and financial: all the involved agencies would have to buy and be prepared to maintain similar computer equipment and software. **Citing different needs and ways of operating, different agencies often resist such coordination. Multiple agencies are already developing their own, unique proliferation databases for internal use.**

Third, although an interagency network could handle classified information, there are good reasons to keep certain categories of data compartmented (available only to certain classes of users) as well as classified. The Atomic Energy Act requires DOE to protect Restricted Data having to do with nuclear weapons; within that category, some subcategories of information are dispensed only to those with a particular “need to know” and, for some types of information, whose terminals are located in specially secured areas. Therefore, great care will have to be taken in finding the level of detail about nuclear technology to put in the database that will be useful to all the participants but at the same time does not put nuclear weapon design information at undue risk.

The other category of specially protected information relevant to a nonproliferation network is intelligence. Ideally, the database would contain all the necessary intelligence *findings* about potential proliferant programs without revealing the sources and methods behind those findings. In practice, this can be difficult: the very fact that the government possesses some information can sometimes indicate where that information must have come from.

Computer networks can be designed to allow various levels of access to information, depending on the clearance level of the user or the terminal. This should not be an insurmountable problem for

the PINS or some extended version of it. The larger problem is deciding what levels of information users need to do their jobs properly.

## MORE EFFECTIVE LICENSING ADMINISTRATION

Building lists of controlled items, countries, and end-users is just the first step in the administration of an export control system. The next, equally important, step is the administration of the licensing process. Several measures arguably have potential for increasing the effectiveness of the licensing process.

### Improved U.S. Government Computer Systems for License Evaluation

The Department of Commerce (DOC) now has a computer system, installed in 1985, that tracks export control license applications.<sup>3</sup> License applicants can submit applications directly by computer; alternatively, the Office of Export Licensing (OEL) will digitally scan paper applications into the system. From then on, the license application, with the supporting information supplied by the applicant, can be routed electronically through the OEL and to other agencies to which the application might be referred for review.

**There are things that the current system cannot do that might both speed up and bring better information and judgment to bear on licensing decisions:**

- allow reviewing analysts of any agency to which licenses are referred to extract, in real time (i.e., as the analyst sits at his desk considering an application) data about previous relevant decisions or other current applications dealing with the same types of commodities, sellers, buyers, or proposed end-users and end-users;
- supply, on the same computer screen at the same time, technical background information,

<sup>3</sup>The system is called the “Export Control Automated Support System,” or ECASS

current intelligence, or other information about parties to the proposed transaction; and permit access to all potentially relevant information among all participants (in whatever agency) in the license review process.

The computer technologies described above in the section on improving the list-building process could be even more usefully applied to bring these features to the licensing process. Indeed, as the DOE envisages for its PIN system, the same computer network could serve both activities at once. The hurdles to installing such a system that are also described above would still apply.

### Increase Public Accountability of Licensing Decisions

Today, DOC issues an annual list of licenses granted for commodities to restricted nations, with summary data about the number of licenses granted for each type of commodity and the dollar value for each type going to each nation. Recent legislation proposed in the Congress would require that within 6 months after issuance of a license to export any *nuclear* dual-use item, the Secretary of Commerce would publish the commodity description, the country destination, the end-use and end-user, the quantity, the date of approval, and the date and method of shipment.<sup>4</sup> Speaking in support of this legislation, Senator Glenn said:

The present system of nondisclosure has led, especially in the case of goods sent to Iraq, to a crisis in public confidence that America has its own export control house in order. The best way to restore that confidence and to ensure more effective oversight and accountability is to permit greater public scrutiny of the nonproprietary licensing data.<sup>5</sup>

Some analysts have advocated that exporting companies should be identified as well:

Congress should now require the Commerce Department to publish quarterly summaries of all dual-use licensing actions . . . The list would only cover licensing actions that have been completed. Pending sales would not be reported.<sup>b</sup>

Advocates of transparency in licensing decisions have been interested primarily in public accountability:

Pushing export licensing into the light of day would encourage the exporters to be honest, encourage the government to be careful, and allow the public to find out whether U.S. exports are undermining national security.<sup>7</sup>

**There are other possible benefits from making the information openly available.** First, it would enhance unclassified analyses by non-governmental investigators of export-import patterns that might identify previously undetected weapon programs or supply networks (see below, in the section on improving multilateral export controls, for the benefits of strengthening unclassified analytic efforts). Second, it might set a precedent for helping to persuade other nations to release comparable information, thus easing the task of both governments and nongovernmental groups in identifying possible avenues of proliferation. Third, one critic of the current system has argued that revealing all licensing decisions (including denials and returns without action) would increase the fairness of the system by letting all sellers know what types of exports had previously been approved. This information, he says, would allow any firm both to predict better whether its own license application is likely to be approved and to give it a basis for appeal of what it believes to be an unfair decision. If, as this author argues, licensing

<sup>4</sup>The "Nuclear Export Reorganization Act of 1993," bill S. 1055 introduced May 27, 1993, Sec. 3 10; the corresponding House bill was H.R. 2359.

<sup>5</sup>John Glenn, *Congressional Record* (May 27, 1993), Daily ed., S6773.

<sup>6</sup>Gary Milhollin, "Licensing Mass Destruction: U.S. Exports to Iraq, 1985- 1990," manuscript, Wisconsin Project on Nuclear Arms Control, June 1991, p. 14.

<sup>7</sup>*Ibid.*

decisions are to be subjected to judicial, as well as administrative, appeals, such information becomes all the more necessary.<sup>8</sup> Commerce Department officials, however, say that each license application is judged on its own merits under the particular circumstances; therefore, the experience of previous applicants would not tell the exporter much about how his own application would fare, either in administrative or judicial review.

There are some objections to this level of transparency in the licensing process. First, companies submitting license applications worry about the revelation of proprietary data that would compromise competitive advantages. Although some advocates of releasing licensing information argue that companies have no reason to conceal legitimate sales, the question is somewhat more complex.<sup>9</sup> For some goods or technologies, the fact that certain companies have found (entirely legitimate) buyers for particular products could tip off competitors to explore markets previously only known to the company applying for the license. In such cases, the biggest losers could be the most successful firms: information about their customer bases would be revealed to competitors who had not yet penetrated the market as well.

In addition, license applicants sometimes supply a considerable amount of detailed data about their products to support their applications; exposure of that data and of pricing information could give advantages to their competitors for legitimate sales. On the other hand, it should be possible to exclude these more detailed proprietary data from the public domain. Finally, since license approvals are good for 2 years, an approved license may not correspond to a completed sales agreement; therefore, means would have to be found for pro-

tecting exporters from competitors' exploitation of information about uncompleted sales. One option would be to require exporters not only to apply for licenses, but to report to the government when and to what extent the shipments licensed actually took place. This would have the additional benefit of providing more complete information about international trade patterns in sensitive technology.

**Publishing licensing data would permit more external oversight of governmental decisions.** It would also expose those decisions to the possibility of politicized second guessing. Outside observers will question both individual decisions and the overall pattern of decisions—that is the point of public accountability. Those criticisms may often be justified; at other times, they will not. In either case, they will not be made with the full range of classified and proprietary information available to the decision makers. Depending on the prevailing political atmosphere, the anticipation of external criticisms (including those from Capitol Hill) could lead licensing officers either to be hesitant to approve exports (thus restraining legitimate business) or reluctant to deny them (thus increasing proliferation risks).

### Strengthen Interagency Review Processes

Procedures for referring export license applications to other agencies outside the DOC are meant to assure that those agencies can bring to bear:

- a broader range of substantive and technical knowledge and judgment than is available in any single agency, and

<sup>8</sup>Howard N. Fenton, "Reforming the Procedures of the Export Administration Act. A Call for Openness and Administrative Due Process," *Texas International Law Journal*, vol. 27, winter 1992, p. 61.

<sup>9</sup>SW, e.g., Kenneth R. Timmerman, "Time for a Non-Proliferation Agenda," *Eye on Supply*, winter 1993, p. 78. Similarly, Milhollin argues: If a company is ashamed of having sold one of its products to a developing country, the company should not have made the sale in the first place. Reputable companies do not object to telling the truth about their business. If the sales are legitimate, and satisfy the export criteria, there is no reason to keep them hidden. op. cit., footnote 6, p. 14.

- the other agencies jurisdictional perspectives on U.S. national security and foreign policy interests.

It is also possible that additional analysis by more than one agency could catch problems that only a single-pass review might miss. **Some critics of the current administrative arrangements for reviewing applications have proposed changes intended to increase assurances that the referral process will block inappropriate license approvals.**

For example, one proposal is that all proliferation-relevant applications be automatically referred to the Defense Department, which would manage further referrals and make the final licensing decision.<sup>10</sup> The basis for this proposal is the author's judgment that in the 1980s the Commerce Department issued numerous export licenses for Iraq without referring them to the proper external agencies. In this author's view, the reason for these failures is the "conflict between the Commerce Department's duty to promote exports and its duty to regulate them."<sup>11</sup> It should also be recalled, however, that during the 1980s, high-level U.S. policy was tilting toward Iraq in its war against Iran, and it may have been Administration political judgments—rather than Commerce Department zeal for export promotion—that led to questionable license approvals. Commerce officials say that during this period, the Department referred applications to the Defense Department according to mutually agreed-upon procedures.

Another proposal has been to give the Arms Control and Disarmament Agency (ACDA) a stronger role in the export licensing process. Senate Foreign Relations Committee legislation proposing this step in 1993 was put on hold at the Administration's request until the Administration could prepare its proposed revision of the Export

Administration Act (EAA). In exchange for the delay, Administration officials offered the Committee assurances that in the meanwhile the ACDA role in dual-use export control review and decision making would be strengthened.<sup>12</sup>

However, **attempting to produce policy shifts by legislating structural changes may not always produce the desired effects.** For example, although in the past the Defense Department favored the strictest of export controls, officials at the highest levels of DOD strongly supported the Clinton Administration's raising of control thresholds for computers in the fall of 1993.

Another proposal for increasing participation of other agencies is to require the DOC to send information copies to one or more other agencies of the licenses it intends to approve but does not intend to refer formally to those agencies. Such a procedure might have two benefits. First, it would give the other agencies additional information to use in their own analysis of international trade patterns relevant to proliferation. Second, depending on how long before actual license approval the information came in, it would give the other agencies the opportunity to make the case with DOC that they should have the opportunity to review certain applications. Even though DOC may be making a good-faith judgment that its referral policies were consistent with interagency understandings, differences of interpretation might arise in particular instances.

**Short of removing export licensing management from the DOC, the interagency review process for certain types of referral could be further formalized, with greater authority given to interagency groups.** Under current procedures, DOC refers Nuclear Referral List items (as well as transactions involving known nuclear end-users) to DOE, and to other agencies, according to rules agreed on between DOC and those agencies.

<sup>10</sup>Milhollin, *op. cit.*, pp.12-13.

<sup>11</sup>Ibid.

<sup>12</sup>U.S. Congress, Senate, Committee on Foreign Relations, *The Arms Control and Nonproliferation Act of 1993*, Report 103-172, Nov. 5, 1993.

If either DOC or DOE believes either that the application should be denied, or that it should undergo further review, then it is referred to the interagency Subgroup on Nuclear Export Coordination (SNEC, representing the Departments of Defense, Commerce, State, and Energy, as well as the Arms Control and Disarmament Agency and the Nuclear Regulatory Commission). In calendar year 1993, 740 applications were so referred. The SNEC either provides its unanimous information and advice to DOC or sends the application for higher level review. The proposed Nuclear Export Reorganization Act of 1993 would have legislatively established the SNEC within the National Security Council, required it to review applications to export any item on the Nuclear Referral List, and give it deciding (rather than just advisory) authority over licenses.<sup>13</sup> The group would also have been responsible for maintaining the Nuclear Referral List itself. The purpose of such a role for the SNEC would be to assure that the full panoply of information and expertise available in the government would be brought to bear on every licensing decision.

Formalizing the interagency review process in this way would probably impose the costs of creating a new bureaucratic unit, complete with staff and administrative support. It would also require a new computer system able to manage records of discussions and decisions for both licensing processing and export control targeting purposes. On the other hand, such a computer system would probably be useful whether a new bureaucratic unit were created or not. If the new unit were created, the agency personnel already performing the licensing review and list-construction functions could be assigned to the SNEC full-time rather than part-time, so the net additional cost might not be high. Another benefit of having a formalized, routine, and well-staffed interagency re-

view process could be to shorten the time that licensing decisions now take. That might help answer one of the major industry complaints about the current process (see below, ch. 6, p. 64).

## I Increase Export Control Awareness Among Exporters

Through the Federal Register and through publications of its own, the DOC informs exporters of export control regulations and of countries and end-users of particular concern. One proposal is that the SNEC publish a regular bulletin that would expand on such efforts to include information on

... regulations, international agreements, and other relevant developments [to inform] exporters and the general public about the risks of proliferation and efforts to reduce or eliminate such risks.<sup>14</sup>

Such a publication could also cover other types of proliferation besides nuclear. Extensive publication of government information on suspect programs would be one way of enabling exporters to cooperate with nonproliferation efforts. According to the U.S. Customs Service, industry is its best source of information about illegal acquisition attempts. **Thus, it is important not only that companies comply with export regulations themselves, but that they report approaches from buyers who may be trying to evade the regulations.** (The Commerce Department and the Customs Service already have publicity programs aimed at informing exporters of possible indications of illegal exports.)

To encourage cooperation by U.S. companies, the United States could permit firms to petition for investigation of, and possibly sanctions on, foreign companies that they suspect are undercutting internationally agreed export controls.<sup>15</sup> This

<sup>13</sup>S. 1055, op. cit., footnote 4, Section 102(b).

<sup>14</sup>Ibid.

<sup>15</sup>Also a feature of the proposed Nuclear Export Reorganization Act, loc. cit. footnote 4.

## 38 | Export Controls and Nonproliferation Policy

process might both help assure U.S. firms that they would not have to face unfair competition and help provide the government with more information on possible avenues of proliferation.

### IMPROVED ENFORCEMENT

#### I Increase Enforcement Resources

The DOC Bureau of Export Administration, cooperating with U.S. diplomatic posts abroad, the U.S. Customs Service, and foreign governments, sometimes conducts pre-license checks and post-shipment verifications on the end-users named in export license applications. The resources now available for conducting these checks are extremely limited. Nor, according to a 1993 report by the DOC Inspector General, have they always been administered systematically, efficiently, or according to established guidelines. In particular, random checks lacked a strategic plan, with stated purposes and priorities. In fiscal year 1992, commercial officers at foreign posts conducted 568 pre-license checks and 177 post-shipment verifications, of these, 65 to 75 percent were random checks, while the remainder resulted from derogatory information.<sup>16</sup>

Checks and verifications could, first, be systematized. More effective sharing of data and analysis (as might occur with other options discussed in this report) could help the DOC and other agencies plan a more coherent checking strategy. Second, checks could be increased annually on a stepped basis, with each increment of checking activity weighed against the number of undesirable buyers that it revealed. If the checks were effective, one would expect to see an initial jump in such discoveries, followed in a few years by a decline as the threat of discovery deterred more objectionable buyers. The trick would be to find the point of declining marginal returns—the increment of expense in checking that did not produce a commensurate increment of deterrence.

Both checks and verifications are best seen as means of gathering evidence about the credibility of buyers before a new or additional license is granted (or before additional shipments are made under an existing license). Checks may help weed out obvious front-company buyers and firms or agencies that have clearly misrepresented their functions. However, unless an item has actually been removed from its intended site, post-shipment checks may not easily detect whether items are being used for their stated purposes. If someone is misusing a controlled item at the declared site for its legitimate employment, that user is probably capable of concealing the fact from the U.S. Foreign Commercial Service officers who usually do the checking. If the item has been diverted elsewhere, little information (except that the buyer is untrustworthy) has been obtained; retrieving the transferred item is unlikely to be an option.

In addition to pre-license and end-user checks, Commerce Export Administration and Customs enforcement officials conduct investigations, gather evidence, and make arrests. Resources for these more traditional law-enforcement activities could be increased.

#### I Reinforce the “Know” Rule

Current regulations require companies to obtain Individual Validated Licenses (IVLS) for exports of any items, listed in the Commerce Control List or not, that they know (or are informed) are destined to be “directly employed in” the design, development, acquisition, or use of missiles or chemical or biological weapons in a country listed in one of the supplements to the Export Administration Regulations (EAR). The Department also offers guidance about what an exporter can reasonably be expected to do to avoid customers who may be engaged in inappropriate end-uses. An exporter who has even “reason to know” that

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<sup>16</sup>Offices of Inspector General at the U.S. Departments of Commerce, Defense, Energy, and State, “The Federal Government’s Export Licensing Processes for Munitions and Dual-Use Commodities: Special Interagency Review,” September 1993, pp. A 13-A 17.

1758 *Federal Register*, 68029-68031, Dec. 23, 1993.

items or data might be used in a *nuclear* program must also apply for a license.<sup>18</sup>

Exporting industries have argued strongly against maintaining this rule; its pros and cons are discussed further in chapter 6, on options for reducing industry burdens. Should it be retained, however, the kind of bulletin described in the section above could help assure that exporters have sufficient reason to know about risky exports to be held accountable. The Commerce Department already encourages companies to request advisory opinions from the government as to whether a contemplated export would subject them to legal sanctions.

### Expand Computer Network Resources

The same sort of computer network, discussed above, that could enhance list-making and licensing could also assist enforcement personnel in identifying suspicious transactions. Enforcement officials at Commerce Bureau of Export Administration (BXA) have been studying various sources of data beyond those available from intelligence and law enforcement agencies to see if they might help reveal suspicious export patterns. For example, U.S. Census data on all the types and quantities of items going to a particular country might reveal patterns of imports suggesting diversion to a proliferant weapon program. Thus far, however, Commerce has not had the resources to put this sort of analysis into the context of a larger, more encompassing database of the type described above.

### I Extend Sanctions

U.S. laws provide for penalties against U.S. persons (individuals or firms) who violate U.S. export regulations. In recent years, Congress has attempted to bring sanctions to bear on others who aid proliferation as well. In 1991, Congress ex-

tended sanctions *to foreign* persons whose exports materially contribute to either chemical or biological weapon programs. The sanctions are bans on U.S. government procurement from those persons and on any United States imports from them. A 1990 law also imposes various sanctions on foreign persons who violate the Missile Technology Control Regime (MTCR), including a ban on U.S. imports from those whose exports have substantially contributed to a non-MTCR adherent missile program. Similar sanctions could be instituted for those engaging in illicit nuclear exports.

The Administration draft EAA attempts to consolidate the sanctions provisions of the current laws on chemical and biological weapons proliferation and use and on missile technology control. The sanctions section of this draft bill is summarized in table 5-1.

The subject of sanctions in export controls is a confusing one because of the circular relationship between the two: **sometimes sanctions are tools to enforce export controls, and sometimes export controls themselves are the sanctions.** Moreover, export controls adopted for one purpose are applied as sanctions for another purpose. It is important, therefore, to make judgments about controls and sanctions in the context of their purposes. In particular, from the standpoint of nonproliferation policy, the utility of export controls intended primarily to deny access to items that directly contribute to proliferation should not be judged on the basis of their effectiveness or cost in efforts to punish some nations for their support of international terrorism.

When economic sanctions are applied for any purpose, they usually pose dilemmas for policy makers. First, they impose costs on the United States as well as on the target of the sanctions: export bans cost sales to U.S. firms; import bans keep out things that U.S. consumers may want or

<sup>18</sup>For further discussion of the “know” and “reason to know” rules, see ch. 6.

<sup>19</sup>As the Nuclear Export Reorganization bill, *op. cit.*, footnote 4, proposes to do.

TABLE 5-1: Sanctions in the Administration Draft EAA of 1994

Action	Chemical, Biological Weapon (CBW) or Missile Proliferation	Chemical, Biological Weapon Use
<b>Presidential determination</b>	<p>Any foreign person has knowingly, or with reason to know, contributed materially to the efforts of any government, group, entity, or project to use, design, develop, produce, stockpile, or otherwise acquire chemical or biological weapons (or missiles)</p> <ul style="list-style-type: none"> <li>▪ through the export or transfer of any chemicals, biological agents or equipment which may contribute to a chemical or biological weapons program such as those listed by the Australia Group (or items listed in the Missile Technology Control Regime annex) whether or not of U.S.-origin, or</li> <li>▪ by participating in any financial transaction related to the described activity or</li> <li>• by facilitating the described activity</li> </ul>	<ol style="list-style-type: none"> <li>1) The government of a foreign country has used chemical or biological weapons in violation of international law or used lethal chemical or biological weapons against its own nationals,</li> <li>2) Within 3 months of the above determination, violation government has not <ul style="list-style-type: none"> <li>▪ ceased use,</li> <li>▪ provided reliable assurances of non-use in the future, and</li> <li>▪ agreed to on-site inspections to verify non-use</li> </ul> </li> </ol>
<b>Mandatory sanctions</b>	<p>Denial of exports of items controlled by the Australia group (or the MTCR annex)</p> <p>Imports of such items from such entities prohibited</p>	All of the sanctions listed below as Mandatory for CBW use
<b>Discretionary sanctions</b>	<p>In event of CBW proliferation, President may choose any of the 11 actions listed as mandatory or discretionary for use of CBW (see rows below), such sanctions shall be proportionate to the harm the sanctioned behavior has caused to the national security or nonproliferation interests of the United States</p>	<p>If President makes second determination above, he must impose at least 3 of the following 6 listed below as Discretionary for CBW use</p>
<b>Mandatory sanctions for CBW use</b>	<ol style="list-style-type: none"> <li>1) No U S Government procurement for a minimum of 2 years of any kind from or produced by CB-using country</li> <li>2) Termination of U S foreign assistance (except urgent humanitarian aid and agricultural products)</li> <li>3) Termination of U.S. arms sales</li> <li>4) Denial of U.S. Government credit or other financial aid</li> <li>5) Denial of national-security sensitive EAA-controlled exports</li> </ol>	
<b>Discretionary sanctions for CBW use</b>	<ol style="list-style-type: none"> <li>1) Oppose loans or other aid by international financial institutions</li> <li>2) Prohibit any U S bank from making loans or credit except for agricultural products</li> <li>3) Prohibit U.S. exports to the country of all items except agricultural products</li> <li>4) Restrict Importation of articles that are the growth, product, or manufacture of the country</li> <li>5) Downgrade or suspend diplomatic relations with the country</li> <li>6) Suspend country's air carriers from engaging in foreign air transportation to or from the U S.</li> </ol>	

TABLE 5-1: Sanctions in the Administration Draft EAA of 1994 (cont'd.)

<b>Deferrals</b>	<ol style="list-style-type: none"> <li>1 President may delay determinations (above) or sanctions to protect ongoing criminal investigations or sensitive Intelligence sources being used to gather further Information on proliferation</li> <li>2 President may delay sanctions for up to 180 days if the U S is engaged in diplomatic efforts to curtail the sanctioned conduct or obtain sanctions against the person from the government of jurisdiction over that person If these efforts succeed, U.S. sanctions not required</li> </ol>
<b>Exceptions</b>	<p>Sanctions not required in cases of</p> <ul style="list-style-type: none"> <li>▪ export or transfer authorized by, or exports to, a country adhering to the Australia Group or a signatory to the Chemical Weapons Convention</li> <li>▪ defense procurement under existing contracts, if the defense articles or services are not readily available elsewhere, or they are essential to national security under defense co-production agreements</li> <li>▪ other Imports under existing contracts, spare parts component parts, information, or technology essential to U S products or production, routine servicing of products not otherwise readily available, medical or other humanitarian items</li> <li>▪ any transactions subject to the reporting requirements of the National Security Act of 1947</li> <li>▪ performance of prior contracts when barring it not necessary to achieve U S national security or nonproliferation objects and would be contrary to the national interest</li> </ul>
<b>Waivers of application of sanctions</b>	<p>President may waive sanctions if he or she determines that a waiver is Important to the national interests of the U S and notifies Congress not less than 20 days before waiver takes effect</p>

SOURCE Department of Commerce and Off Ice of Technology Assessment, 1994

that U.S. producers may need.<sup>20</sup> Second, they risk achieving so much distance between the U.S. and the target state that the latter decides to simply defy the sanctions and resist all further U.S. influence. Third, if the United States is too far ahead of the rest of the international community in imposing sanctions, its efforts are likely to be undercut by other nations.

The Administration draft EAA attempts to take account of these dilemmas by granting the president nearly total discretion in imposing sanctions; essentially, the draft authorizes a wide range of sanctions, extending up to complete embargo, then adds sufficient deferrals, exceptions, and waivers to allow him to do nothing if he so decides. Broadly speaking, one of two other legislative policies could be adopted:

- first, limit the president ability to defer or waive one or more sanctions (i.e. mandate them or narrow the exceptions); or
- second, limit the president's authority to impose sanctions, either in kinds or in duration.

Each of these three legislative approaches—flexibility, mandate, or restriction—has its drawbacks. Granting great flexibility risks that a president will do nothing when the Congress might wish that he would do something, or vice-versa. Unconditionally mandating sanctions risks forcing the president to take actions in unforeseen circumstances that may be costly but either ineffective or actually detrimental to nonproliferation goals. Restricting sanctions risks making them

<sup>20</sup>Not (rely do sanctions impose costs on the side imposing the sanctions, but the > fall unevenly on its citizens. Firms that depend on the export of controlled items have more to lose than those that do not; firms that depend on imports from the targeted party have more to lose than those who import from elsewhere. Even in a total embargo of the target party, particularly if it is an entire nation, some U.S. exporters and importers would lose more than others, depending on the prior patterns of trade between the two countries.

unavailable in circumstances where they might be effective.

A compromise option would be to permit the flexibility requested in the Administration draft EAA, but to accompany it with more explicit provisions for accountability to Congress about the costs and effectiveness of sanctions imposed. The Administration bill already would require assessments of economic costs and qualitative estimates of effectiveness for export controls; presumably, these required reports to Congress would have to be made when export controls were used as sanctions as well as when they were used for their primary purposes of denial. The same kinds of assessments could also be required for the other types of sanctions listed in table 5-1. Such reports (if their quality were maintained by the demands of watchful congressional oversight committees) would permit the legislative branch to make independent judgments on whether executive branch decisions on the costs and benefits of sanctions were serving the national interest.

### STRENGTHENING MULTILATERAL CONTROLS

**Since there are very few technologies useful to proliferant weapons programs that the United States produces uniquely, international cooperation among potential suppliers or transshippers is essential to effective export controls.** The United States has played a key role in the establishment and operation of the existing multilateral supplier groups: the Nuclear Suppliers Groups (NSG), the Australia Group, the MTCR, the Coordinating Committee on Multilateral Export (COCOM), and the COCOM successor. Recent successes include leading the NSG in

1992 to agree to adopt multilateral controls on certain dual-use technologies (see box 5-1 for description of NSG guidelines) and getting Russia in 1993 to promise full compliance with the terms of the MTCR.<sup>21</sup> Additional steps to strengthen multilateral controls are possible.

### Keep Conventional and Mass-Destruction Weapons on Separate Tracks

The oldest, most highly coordinated, but also the most contentious, of the supplier-group regimes for dual-use items was COCOM. COCOM dual-use controls (the “Industrial List”) were intended primarily to keep advanced conventional military technologies out of the hands of potential adversaries of the United States and its allies.<sup>22</sup> Differing interpretations of COCOM requirements led to some disputes between the United States and its European allies. The administration of national security (i.e., COCOM) controls also led to the greatest complaints of unfairness from U.S. industry.<sup>23</sup>

With the end of the Cold War, the membership, targets, and listed technologies for any successor arrangement to COCOM (former] y a Western arrangement for denying technology to Communist nations, terminated at the end of March 1994) *are* undergoing significant changes that must be multilaterally negotiated. With technologies applicable to weapons of mass destruction already addressed in other multilateral export control regimes, the COCOM successor regime, if created, will most likely attempt to regulate the transfer of technologies for developing or making conventional weapons. Consensus will be difficult to reach, both within the United States and

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<sup>21</sup>When it adopted new guidelines on dual-use technology transfers, the NSG also adopted a rule, long advocated by the United States, that the transfer of certain nuclear-related “trigger list” technologies would be conditioned on acceptance by the recipient of IAEA safeguards on any other facilities in the country of the same type to which the technology was being transferred.

<sup>22</sup>COCOM also had a list of nuclear-related technologies, but apparently these had little consequence for U.S. export administration because the other nuclear-supplier agreements are more comprehensive. In addition, there was a COCOM list of military equipment, controlled in the United States under the Arms Export Control Act.

<sup>23</sup>See, for example, Thomas T. Connelly, “Statement on Behalf of AMT—The Association for Manufacturing Technology-bef(we the Subcommittee on Economic Policy, Trade, and Environment of the House Committee on Foreign Affairs,” Nov. 18, 1993, pp. 6-7.

### BOX 5-1: Nuclear Suppliers' Group Guidelines on Dual-Use Technology Licensing Procedures

Supplier should establish export licensing procedures for the transfer of equipment, material, and related technology identified in the Annex. These procedures should include enforcement measures for violations. In considering whether to authorize such transfers, suppliers should exercise prudence in order to carry out the Basic Principle and should take relevant factors into account, including

- a whether the recipient state is a party to the Nuclear Non-Proliferation Treaty (NPT) or to the Treaty for the Prohibition of Nuclear Weapons in Latin America (Treaty of Tlatelolco), or to a similar International legally-binding nuclear nonproliferation agreement, and has an IAEA safeguards agreement in force applicable to all its peaceful nuclear activities,
- b whether any recipient state that is not party to [the treaties named above] has any [nuclear fuel-cycle facilities] that are operational or being designed or constructed that are not, or will not be subject to IAEA safeguards,
- c whether the [item] to be transferred is appropriate for the stated end-use and whether that stated end-use is appropriate for the end-user,
- d whether the [item] to be transferred is to be used in research on, or development, design, manufacture, construction operation or maintenance of any reprocessing or enrichment facility;
- e whether government actions, statements, and policies of the recipient state are supportive of nuclear nonproliferation and whether the recipient state is in compliance with its international obligations in the field of nonproliferation
- f whether the recipients have been engaged in clandestine or illegal procurement activities and
- g whether a transfer has not been authorized to the end-user or whether the end-user has diverted for purposes inconsistent with the Guidelines any transfer previously authorized

SOURCE International Atomic Energy Agency INFCIRC/254Rev .1 Part 2 July 1992

among the international participants, about what technologies should be controlled and for what reasons.<sup>24</sup> **Therefore, the nonproliferation regimes dealing with weapons of mass destruction (and missiles), for which considerable consensus has already been painstakingly built, should not be mixed into controversies over COCOM revisions of technologies controlled for other purposes.** Administration officials have spoken of moving the emphasis in a successor arrangement from maintaining the West military technology edge over Communist countries to limiting the proliferation of technologies enab-

ling production of advanced conventional weapons to some states not now possessing them. See table 5-2 for a comparison of the COCOM and weapons of mass destruction regimes.

A National Academy of Sciences study on export controls proposed either an additional nonproliferation category and regime for conventional weapons technology, or incorporation of conventional technologies into one of the existing regimes.<sup>25</sup> The above argument favors a separate negotiating forum for conventional weapon technologies. Insofar as those overlap with nu-

<sup>24</sup>For example, some nations resist cooperation with nonproliferation export control regimes on the grounds that the United States is seeking such controls primarily to protect itself from economic competition; although this is not true, the argument for it is easier to make in the case of export controls intended to block the transfer of technologies that might be usable for a broad range of conventional military applications, not just weapons of mass destruction.

<sup>25</sup>Panel on the Future Design and Implementation of U.S. National Security Export Controls, Findings *Common Ground: U.S. Export Controls in a Changed Global Environment* (Washington, DC: National Academy Press, 1991), p. 131.

TABLE 5–2: COCOM and WMD Regimes Compared

Regime	COCOM	NSG, AG, MTCR	COCOM successor?
<b>Purpose</b>	Maintain Western military-technological advantage over target states	Prevent or slow the spread to target programs of capabilities to develop or produce nuclear, chemical, or biological weapons, or missiles	Prevent or slow the spread to target programs of capabilities to develop or produce advanced conventional weapons
<b>Targets</b>	States under the control of Communist regimes, buyers who might divert items to such states	Activities and facilities to develop, produce, or otherwise acquire weapons of mass destruction or missiles, buyers who might divert items to such activities	Rogue nations falling short of some standards of international behavior
<b>Scope of controls</b>	Wide range of dual-use commodities, technology, and software, including those relevant to modern industrial development as well as those specifically applicable to developing or producing advanced conventional weapons in addition to weapons of mass destruction	Narrower range of dual-use items applicable to developing or producing banned weapons	Similar to COCOM items
<b>Rationale for international consensus</b>	Deterrence of Communist aggression by maintain technological superiority of allied over Communist military forces	Prevention of threats to international peace and security from possession of weapons of mass destruction by those not already having them	Containment of threats to regional or global security posed by “rogue” or “backlash” nations
<b>Principle of operation</b>	Consensus all members must agree to sale of controlled items	National discretion guidance and control lists mutually negotiated, but licensing decisions remain at national level	Probably national discretion

SOURCE Office of Technology Assessment, 1994

clear or missile technologies, they should be covered under the latter regimes anyway.

### Enhancing Nuclear Suppliers’ Group Coordination

In March 1992, the NSG agreed to adopt common export controls on a list of nuclear-related dual-use materials, equipment, and technologies. They agreed to the “Basic Principle” that suppliers

should not authorize transfers of the listed items:

- for use in a non-nuclear-weapon state in a nuclear explosive activity or an unsafe-guarded nuclear fuel cycle activity, or
- in general, when there is an unacceptable risk of diversion to such an activity, or when the transfers are contrary to the objective of averting the proliferation of nuclear weapons .26

<sup>26</sup>International Atomic Energy Agency, INFCIRC/254/Rev.1/Part 1, July 1992, “Communications Received From Certain Member States Regarding Guidelines for the Export of Nuclear Material, Equipment and Technology: Nuclear-Related Dual-Use Transfers,” Annex Attachment, p. 2.

The NSG agreed that decisions to approve exports of the items on this list would take into account several relevant factors in deciding whether transfers were acceptable (see box 5-1). One of those factors was to be whether a transfer has been refused by someone else (i.e., a “no-undercut” guideline).

One observer has expressed concern about the actual results of this agreement:

The NSG members have agreed to exchange information on non-NSG states’ nuclear programs and dual-technology purchasing activities, and to meet for consultations at least once a year. So long as these arrangements remain loosely specified and relatively uncoordinated, they may not substantially improve the overall quality of the intelligence available to NSG members.<sup>27</sup>

This author proposes that the United States

... should systematically communicate information and share intelligence assessments with other NSG members in order to ensure that multilateral restrictions on sensitive dual-technologies are effectively implemented and lists of restricted technologies are properly kept up to date.<sup>28</sup>

**Modern telecommunications and computing technology make it possible to convey much of this information almost instantaneously.**

The Department of Energy Office of Arms Control is sponsoring a project on International Export Information Sharing, centering on computerization of information sharing for the NSG agreement on controlling exports of dual-use technologies. The types of information to be included in this database are:

- export license denials;
- reference data useful to Nuclear Suppliers Group members;
- documents and information related to NSG guidelines on specifically nuclear-related equipment, materials, and technologies; and

- documents and information related to NSG guidelines on nuclear-related dual-use equipment, materials, and technologies.

The database would reside on an international computer network, with each member state having an inexpensive terminal linking it to the system. Besides giving the members access to a common database, the system would also allow them to exchange electronic mail on NSG export control matters. Thus far, 20 NSG members have agreed to install test terminals for this system, and 8 have been emplaced.

**Such a network would offer a variety of opportunities for increased coordination among the Nuclear Suppliers.** In agreeing to multilateral controls on dual-use technologies, the NSG members also agreed to inform one another when they deny export license applications for the listed items. Timely dissemination of this information would allow each supplier to consider its own export decisions in the light of those made by any of the others. Once refused an export license in one country, a potential buyer would not have a chance to find another supplier in another country even if that country did not have independent reason for suspicion about him. **License denial information, as well as some of the other kinds of information described below, could be especially useful to governments without the extensive export control infrastructure and intelligence resources of some of the larger members of the NSG.**

The reference data, documents, and other information in the database would include:

- official documents, key officials and contact persons, and various types of supporting information including International Atomic Energy Agency (IAEA) information circulars and data on related international agreements;

<sup>27</sup>Owen Greene, “US Export Control Policy and Strengthening the Nonproliferation Regime,” *Eye on Supply*, winter 1993, p. 80.

<sup>28</sup>Ibid.

- copies of other nuclear-proliferation-relevant agreements (e.g., the Nuclear Non-Proliferation Treaty [NPT]) and membership lists;
- guides to the nuclear fuel cycle, to help ascertain the significance of specific equipment or technologies; and
- the latest information on the control of “Trigger List” items—those directly nuclear-related items whose export requires that the buyer submit his facilities that either use, or could use, the items to IAEA safeguards.

Not only would the database provide immediate posting of all denials of licenses for transfers of dual-use materials, equipment, and technology, but it would also constitute a cumulative record of the items, suppliers, and proposed buyers in the denied transactions. Such an organized record could help the member governments better identify and act on particular proliferation risks.

In addition to license denial information, the database would include other information on potentially risky end-users, such as those with unsafeguarded nuclear activities, or those on various members’ lists of suspected proliferants. **It could also serve as a funnel for some of the contributions of national intelligence services to the multilateral group.** On some occasions, it may be possible to enter information into such a relatively open forum by developing unclassified sources to cite for facts first detected by classified means. (See section below on the utility of supporting open-source proliferation analyses. ) A possible drawback to permitting such contributions to a database would be the risk that inaccurate information (intentionally or unintentionally placed) would accumulate and be difficult to remove.

**The NSG sharing scheme in principle could be expanded by including export license approvals as well as denials.** With this wider range of data about exports with nuclear-weapon pro-

gram potential, all members would have a better chance of discerning trade patterns that might help identify suspicious end-users or possible diversion paths. For the reasons cited above with respect to the option of the U.S. Commerce Department publicly reporting license approvals, other members of the NSG may resist revelation of theirs.<sup>29</sup> Should the United States decide to seek such reporting, it may need to test that resistance through the leadership both of exhortation and of its own example. Even the expenditure of considerable diplomatic capital with other regime members may not be enough to bring about this degree of cooperation.

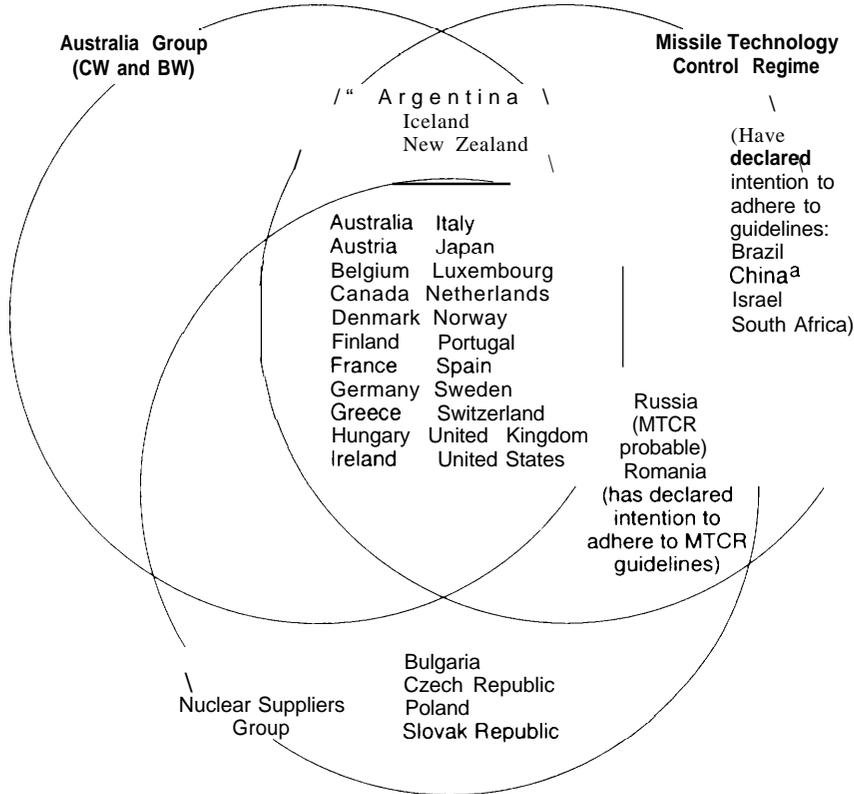
On a separate track, the IAEA has had discussions about maintaining a register of all nuclear-related transfers. The most recent agreement was for the purely voluntary reporting only of fissile material transfers and specially designed nuclear equipment—not dual-use technologies. IAEA officials reported to OTA that compliance even with that limited agreement has been uneven.

### Expanding the NSG Database Idea

The reference information in the proposed Nuclear Suppliers Group database would also include the export guidelines of the MTCR and the control list of the Australia Group. Other than furnishing up-to-date details about those regimes, the database as now proposed would play no further role in coordinating the suppliers. Nevertheless, **the basic mechanisms of the proposed NSG database could be extended to the Australia Group and the MTCR.** This step would be most useful in combination with agreements in those regimes to report export denials, as the NSG members do. Such agreements, however, will not be easy to obtain. Nevertheless, if the political difficulties could be overcome, a single proliferation export-control database seems technically feasible, since there is a high degree of overlapping

<sup>29</sup>As noted above, some firms might be fearful that confidential (but still legitimate) market information might be revealed to competitors if all sales were reported. Even if the supplier-group data were not in the public domain, there would be the possibility that participating governments would leak information to their own country’s firms.

**FIGURE 5-1: Overlapping Membership Among Nonproliferation Export Control Regimes**



<sup>a</sup>China promised to adhere to guidelines in 1991, but has not said it would adhere to revised guidelines of 1993

*There is a considerable overlap among the memberships of the three major nonproliferation export control groups.*

SOURCE Office of Technology Assessment, 1994

membership among these groups (see figure 5-1).<sup>30</sup> Even if perfect overlap were not achieved among the three suppliers groups, levels of access to the system could be differentiated by group membership. Alternatively, separate databases could be set up for each group.

Aside from the supplier groups, there are two other international groupings whose export control systems would benefit from shared data networks: the European Union (EU) and the newly independent states of the former Soviet Union. In 1992 the European Community (EC) Commis-

sion reported to the EC Council on a review of the export control systems of the member states. It found important discrepancies among the states. At the end of August 1992, the Commission drafted an export-control guideline for adoption by the Council. This draft included a proposal for:

... a system of information transmission and exchange, to include all orders and transactions of dual-use items, before actual transfers take place. An electronic data network is envisioned to build on the insights and information of national agencies and to inform all licensing agen-

<sup>30</sup>See Leonard S. Spector and Virginia Foran, "Preventing Weapons Proliferation: Should the Regimes be Combined?" (Muscatine, IA: The Stanley Foundation, 1992).

to build on the insights and information of national agencies and to inform all licensing agencies immediately about the refusal of license applications. Thus, a binding exclusion of refused licenses, in effect in all EC member states, would be in force.<sup>31</sup>

It now appears that the EU will not adopt such measures in the near future. Should it ever undertake to do so, U.S. experience in developing its own networks could position it to cooperate in the establishment of a European Union network. That network might, in turn, become a basis for assistance to other states or groups of states in establishing their own systems. For example, in the summer of 1993, Russia, Ukraine, and Belarus discussed creation of an economic union; one proposal discussed was a common customs and export control system for the group. (See below for further discussion of the export control situation in the former Soviet republics. )

### Increase Intelligence Sharing

Whether by means of a networked database or through other means of communication, **sharing intelligence data about unscrupulous suppliers, buying and financing operations, questionable agents, and suspicious end-users is an important means by which supplier groups can coordinate their export controls.** Shared intelligence could, for example, help members of the NSG make better informed licensing judgments by giving them more information about how prospective buyers measure up against the criteria that they have agreed to take into account in licensing decisions (see above, box 5-1).

The greatest obstacle to sharing intelligence data is the risk that revealing *what* an intelligence agency knows might also reveal *how* it found out: that sources and methods will be compromised. Recognizing this problem, the CIA's Non-Prolif-

eration Center is placing increased emphasis on "actionable" intelligence—information that can be safely revealed when necessary to move against proliferation activities. Enforcement officials at Commerce's BXA have begun a proliferation database based on open sources, but purely for internal use. In principle, such data could be used to help explain to exporters why licenses are being denied, to inform companies about what potential customers to avoid, or to alert other countries to possible proliferation risks.

In some situations, national intelligence agencies having trusted relationships with one another may be able to share secret information. Amongst the large and diverse sets of nations making up the nonproliferation supplier groups, continuous, direct sharing of classified information seems unlikely.<sup>32</sup> What seems more feasible is the production and dissemination of analyses based on open sources. It may also be possible to develop open-source evidence for facts that might originally have been indicated or discovered by secret means.

All information sharing need not take the form of current intelligence. When the supplier groups (NSG, Australia, MTCR) meet, their governments could take the opportunity to send experienced export control officials, not just temporarily assigned diplomats. These officials could be encouraged to examine comparable problems, exchange ideas about methods, and discuss actual case examples that might hold lessons for their counterparts.

**To increase opportunities for multilateral information sharing, one option to consider is to provide government support for non-governmental, open-source database and analytic projects.** Examples of such projects are the Monitoring Proliferation Threats Project at the Monterey Institute of International Studies and the data-

<sup>31</sup>Harald Müller, "The Export Controls Debate In the 'New' European Community," *Arms Control Today*, March 1993, p. 12.

<sup>32</sup>The United States reportedly did find ways of sharing intelligence information about Iraq with the United Nations Special Commission on Iraq, but this could be made a more routine practice. For a discussion of possible national intelligence contributions to United Nations activities, see Garret Jones, "Intelligence Support to United Nations Activities," U.S. Army War College Study Project, Apr. 15, 1993.

base of the Wisconsin Project on Nuclear Arms Control, in Washington. One means of support for such efforts is to contribute grants or award research contracts to the private institutions carrying on such projects. Another would be to share information with them informally: perhaps giving opinions as to which open sources are more or less reliable, which analyses are more or less consonant with government analyses. One analyst suggests:

More "cross-cultural" communication between the governmental and non-governmental non-proliferation communities would be beneficial. With no access to classified information but a suspicious attitude toward bureaucratic assessments, non-governmental analysts have the potential to reach fundamentally incorrect conclusions. Perhaps the non-governmental community should become more tentative in its conclusions as it demonstrates greater skepticism about the reliability of sources. On the other hand, the governmental community may also be too quick to dismiss public sources. Assigning an individual in the higher echelons of government to sanitize classified information for public release without revealing sources and methods would facilitate cross-cultural communication between these two communities.<sup>33</sup>

Whether the information shared multilaterally comes directly from the U.S. government, or whether it comes from private U.S. institutions, there is some risk that it will be perceived as a U.S. tool for manipulating international opinion and decisions to serve unilateral U.S. interests. This risk imposes a need for considerable tact and diplomacy in the ways in which the United States attempts to persuade other nations to act on the information provided. Another way to reduce the risk might be to help create and sponsor *international* nongovernmental organizations to monitor and analyze proliferation problems. The goal would be to minimize the perceived control or in-

fluence of any one national government, with the hope that many governments would both contribute help to and utilize the products of such organizations.

The immediate goal of increased intelligence and other information sharing among governments would be to enhance their export controls. At the same time, greater public information about proliferation activities could help mobilize international support for the whole range of non-proliferation policies surveyed in the first report of this OTA assessment: not only coercive actions against violators of nonproliferation norms, but internal and external pressures on governments to renounce weapons of mass destruction and adhere to the nonproliferation regimes.

### Support Development of FSU Administration of Export Controls

The effectiveness of global export controls will be greatly weakened unless Russia and the other former Soviet states join the full set of western non-proliferation control regimes: NSG, Australia Group, and MTCR. Some progress has been made in this direction with Russia already in the NSG, vowing to become a de facto member of the MTCR, and promising to adhere to Australia Group guidelines. The other newly independent states should also be brought into the nonproliferation regimes. These nations also need to develop effective export control systems. The United States has offered several million in Nunn-Lugar funds for this purpose to each of the four republics retaining Soviet nuclear weapons, but has reached agreement on spending the money only with Belarus. Other republics could probably also make use of financial assistance. In addition to funding, U.S. agencies have also been offering technical assistance in export controls to the former Soviet states.

<sup>33</sup>Mark G. McDonough, "Nuclear Non-Proliferation Project, Conference on Strengthening the Non-Proliferation Regime: Selected Analyses, Findings, and Recommendations," manuscript, Carnegie Endowment for International Peace, Mar. 18-19, 1992, p. 12. For a discussion of the issues raised by the prospect of sharing intelligence information with an international organization see Garret Jones, *op. cit.*, footnote 32.

## 50 | Export Controls and Nonproliferation Policy

A report containing views of both U.S. and Russian experts observed that Russia has yet to develop an effective export control system. Overall, the need is for:

... a competent civil authority with the will and capabilities to enforce the laws, decrees, operation regulation, licensing procedures, and enforcement practices recently adopted by the Government of the Russian Federation.<sup>34</sup>

Specifically, the problems include:

... 1) creating an adequate legislative and executive basis for the structure as a whole and each of its institutional bodies; 2) overcoming the lack of transparency and openness in the administrative and other non-classified activities of enterprises and scientific institutes; 3) installing an effective licensing system in the Russian Federation regarding its rights in both the internal and international arenas, including protection for intellectual property rights; 4) overcoming the present ability of Russian enterprises and institutions to conclude contracts with foreign buyers, including contracts for dual use technologies and armaments, which circumvent national authorities in respect to export authorization, registration, and licensing; 5) instituting customs controls and bringing them up to a sufficient level of effectiveness, particularly at borders with the neighboring states of the former republics of the USSR.<sup>35</sup>

Moreover, not only in Russia, but elsewhere as well:

... the establishment of sovereignty in the new states of the former USSR is unfortunately being accompanied by the weakening of legislative, executive, and judicial powers, a rise in crime, and the formation of organized crime syndicates which include civil servants. The problem of non-proliferation is also exacerbated by the unification of organized crime structures on an international level.<sup>36</sup>

Members of the NAS-RAS group argued that the United States and Russia should work to harmonize and refine their export control lists. They proposed that Russian and American scientists and engineers work together to identify choke-points for the unwanted export or internal transfer of technologies.<sup>37</sup> They suggested that the two countries could establish a bilateral laboratory group that would work to identify and agree upon dangerous dual-use technologies.<sup>38</sup> The two countries might also:

... establish a joint data bank group which would establish joint lists of restricted technologies and enterprises or "projects of concern" to which certain technologies should not be internally transferred or exported.<sup>39</sup>

At the Moscow summit in January 1994, Presidents Clinton and Yeltsin signed a joint "Memorandum of Intent" on "Cooperation in the Area of Export Control," saying their governments intended to cooperate in "any or all" of six areas intended to improve nonproliferation export con-

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<sup>34</sup>U.S. National Academy of Sciences and Russian Academy of Sciences, "Dual Use Technologies and Export Administration in the Post Cold War Era" (Washington, DC: National Academy of Sciences, Apr. 1, 1993), p. 9.

<sup>35</sup>*Ibid.*, p. 14.

<sup>36</sup>*Ibid.*, p. 10.

<sup>37</sup>*Ibid.*, p. 17.

<sup>38</sup>*Ibid.*, p. 17.

<sup>39</sup>*Ibid.*, p. 20.

trols and that they “\*may” establish expert working groups to carry out their intent.<sup>40</sup> At this writing, it is too soon to tell whether these actions will be taken or whether they will result in concrete improvements in the Russian control system.

### I Seek Greater Cooperation From Developing Countries

The newly independent states of the former Soviet Union are not the only emerging source of commodities that could contribute to the spread of weapons of mass destruction. Newly industrializing countries that are not members of the established export control groups are also becoming possible suppliers to proliferant weapon programs.<sup>41</sup> *Involving such nations in multilateral export control arrangements could have two benefits. First, should they establish reasonably effective export control systems, the new suppliers would be less likely to contribute to proliferation. Second, their very membership in the international groups could undermine assertions that the non-proliferation regimes are discriminatory and intended to preserve the economic and military advantages of the more prosperous nations. On the other hand, if the emerging supplier is itself a proliferation threat, it might acquire easier access to items it needed for its own weapon programs, even as it helped control supplies to others.*

India in particular—but other nations as well—has long argued that the Nuclear Non-Proliferation Treaty discriminates unfairly against non-nuclear states. Part of its argument is that until all states give up nuclear weapons, the other states should not be forced to give up the nuclear option. But another part of its argument can be summarized as follows:

... technology export barriers erected on the grounds of national security are also aimed at retention of Western industrial supremacy and control of the global technology markets.<sup>42</sup>

When the United States persuaded Russia to stop the transfer of cryogenic rocket motor technology to India in 1993, a frequent theme in the Indian press was that the “real” reason for the U.S. action was to prevent commercial competition from the Indian space program.

The Clinton Administration’s proposed changes in the Missile Technology Control Regime are designed in part to respond to such arguments. The President announced in his United Nations speech on September 27, 1993:

Now, we will seek to strengthen the principles of the Missile Technology Control Regime by transforming it from an agreement on technology transfer among just 23 nations to a set of rules that can command universal adherence.<sup>43</sup>

<sup>40</sup>The six areas were:

A. Conducting bilateral and multilateral discussions at the political and technical level on matters relating to the enhancement of export control systems;

B. Conducting bilateral consultations at the expert and government levels on obligations relating to non-use of export controlled items for unapproved purposes;

C. Conducting bilateral consultations on specific multilateral export control regimes and their implementation and on the technical parameters of the items and technologies covered by them;

D. Participating in seminars, conferences, and other multilateral meetings devoted to considering export control issues;

E. Discussing opportunities to train personnel involved with export control, the work of licensing and customs agencies, and

F. Joint efforts to expand cooperation in the area of export control.

‘Text’ of Memorandum on Export Controls,” FBIS-SOV-94-010, Jan. 14 1994, p. 20.

<sup>41</sup>See William C. Potter, ed. *International Nuclear Trade and Nonproliferation: The Challenge of the Emerging Suppliers* (Lexington, MA: Lexington Books, 1990) and *The International Missile Bazaar: The New Suppliers Network* (Boulder, CO: Westview Press, 1994).

<sup>42</sup>Brahma Chellaney in *The Global Diffusion of Military Technology: The Proceedings of a Workshop held at the University of Wisconsin, Madison, December 6-8, 1991* (Madison, WI: Center for International Cooperation and Security Studies, University of Wisconsin), p. 19.

<sup>43</sup>President Bill Clinton, “Address to the 48th Session of the United Nations General Assembly,” New York, NY, Sept. 27, 1993.

## 52 | Export Controls and Nonproliferation Policy

A White House fact sheet explained the proposed bargain with developing nations seeking to import space launch vehicle technology:

We will support prudent expansion of the MTCR'S membership to include additional countries that **subscribe to international** nonproliferation standards, enforce effective export controls and abandon offensive ballistic missile programs . . . We will continue to retain a strong presumption of denial against exports to any country of complete space launch vehicles or major components . . . For MTCR member countries, we will not encourage new space launch vehicle programs, which raise questions on both nonproliferation and economic viability grounds.

The United States will, however, consider exports of MTCR-controlled items to MTCR member countries for peaceful space launch programs on a case-by-case basis. We will review whether additional constraints or safeguards could reduce the risk of misuse of space launch technology .44

Critics of this new policy stress the risks, arguing (as the Administration's statement acknowledged) that space launch technology is in some ways analogous to plutonium reprocessing technology: it is economically unsound and carries inherent proliferation risks. First, the nations that do manufacture and launch space launch vehicles all lose money doing so.<sup>45</sup> Second, space launch rocket technology is eminently transferable to ballistic missile programs. A nation that is complying with nonproliferation norms today could change its mind tomorrow, and still be in possession of missile technology; no plausible safeguards are likely to change that potential.

Therefore (from this point of view), in the interests both of fostering the economic welfare of developing nations and of limiting missile proliferation, the transfer of rocket technology should not be used as an incentive to adhere to nonproliferation regimes (for a supporting example, see box 5-2).

A contrasting view is that the Administration's changes on missile export policy do not go far enough. As one analyst has pointed out, NASA is not "economically viable," but the United States still supports its own space launch program for other motives. Countries with fledgling space programs are unlikely to be persuaded that these motives are legitimate for the United States (or Russia, China, France, and Japan) but not for themselves. Nor will they all accept the concept that they must forswear missile programs for themselves while the existing members of the MTCR are entitled to keep theirs.<sup>46</sup> Given the modest benefits proposed ("case-by-case" consideration) and the major concessions asked for (full adherence to nonproliferation norms), it is not clear that in practice there will be many takers for the new Administration Policy on the MTCR.

In its draft for the EAA of 1994, the Clinton Administration proposed providing for (individual validated) license-free exports of controlled items to and among members of a multilateral regime. In addition, under this draft law, nonmembers could be granted adjustments in access to controlled items depending on their adherence to U.S. export control policies. This more convenient access (under either provision) to dual-use technology items might serve as an incentive for some developing

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<sup>44</sup>Office of the Press Secretary, The White House, "Fact Sheet: Nonproliferation and Export Control Policy," Sept. 27, 1993.

<sup>45</sup>However, selling launch services to foreign or domestic commercial firms may help defray the costs of fulfilling other governmental purposes, such as national autonomy in space-launch capabilities. In the case of Russia, it could be that space launch services could profit because of the sunk costs in space launch infrastructure and vehicles already produced primarily for military purposes.

<sup>46</sup>See statement by Lora Lumpe in "The Administration's Non-Proliferation and Export Control Policy," *Arms Control Today*, vol. 23, No. 9, November 1993, pp. 12-13.

### BOX 5-2: Indian Satellite Launch Vehicles: Business or Boondoggle?

The September 20, 1993, launch failure of the Indian Polar Satellite Launch Vehicle (PSLV) can be interpreted to support the arguments for using export controls to deny launch vehicle technology to new entrants. Although this rocket was to place an Earth remote sensing satellite into a sun-synchronous polar orbit, it could also be used as an intercontinental ballistic missile. The Indian Space Research Organization (ISRO) obtained key technology for the second stage, liquid-fueled rocket motor from the French Societe Europeene de Propulsion. In the face of export controls, India developed other key technologies indigenously—e.g., maraging steel and solid propellant (HTPB) for the first stage motor. An Indian journalist concluded before the launch failure that

It is these and other instances of organization foresight which saved the launch vehicle program when the U.S. embargoed all sales to the ISRO. These very same qualities will have to be revived in the ISRO if the launch vehicle program is to survive the trials ahead.<sup>1</sup>

These efforts to work around missile technology export controls apparently have not yet been fully successful. On its maiden launch, the PSLV suffered a mishap after separation of the second stage (of four) that resulted in the rest of the vehicle reaching too low an altitude to reach orbit. ISRO officials reportedly concluded that the next PSLV launch would have to be put back 2 years.

ISRO officials had reportedly hoped to sell as many as 9 satellite launches on the vehicle between 1996 and 2000, thus bringing \$100 million in business. However, since the PSLV development program had already cost \$144 million over 12 years, and since ISRO had said that it could produce the launchers at a cost of \$15 million each, it is not clear when, if ever, the project would have produced profits.<sup>2</sup> Now that the program has been set back another 2 years, arguments that the space launch business is an economic loser for developing countries seem even stronger.

<sup>1</sup> Gopal Raj, *The Hindu* (Madras) Sept 11 1993 p 8; JPRS-TND-9035 Nov 10 1993 p 32.

<sup>2</sup> For reports on the launch failure and on cost estimates see K. S. Jayaraman, "Launch Failure Dents India's Space Plans," *Nature*, vol. 365 (Sept 30 1993) p 382; and Tim Furniss, "PSLV Failure Delays Indian Space Plans," *Flight International*, Sept 29 1993 p 23.

nations to adhere to supplier-regime guidelines. On the other hand, were these nations so well-behaved in the first place, license approvals probably would have been forthcoming anyway.<sup>47</sup> The removal of IVL requirements would probably be welcomed by U.S. exporters who feel that current regulations are too burdensome. The disadvantage to removing validated license requirements is that the United States would lose the opportunity to judge on a case-by-case basis whether the recipient country's own export controls were strong

enough to prevent retransfer of some items. Instead, it would have to arrive at a general judgment to that effect.

Bringing new suppliers or transshippers into the established groups controlling exports is a goal that could contribute to nonproliferation, even if it may be difficult to accomplish in some cases. One analyst has suggested that at the 1995 NPT renewal conference, the parties to the treaty could formally acknowledge the obligation of all of them, not just the nuclear weapon states, to re-

<sup>47</sup> Rocket technology is a somewhat different story, as discussed above; the question there is not whether the exported items will be diverted from one application to another, but whether the application (rocketry) will be diverted from space launch to missile purposes.

## 54 I Export Controls and Nonproliferation Policy

frain from assisting other states to manufacture or acquire nuclear weapons. The Conference could then endorse specific guidelines for national export control laws and procedures.<sup>48</sup>

One analyst has proposed additional measures for fostering increased cooperation from the developing world:

1. the members of the supplier groups could provide statistics on license approvals and denials to counter perceptions that export controls are designed or function to impede economic development;
2. supplier groups could meet regularly with developing countries that adhere to nonproliferation norms to explain the reasons for nonproliferation export control policies and answer complaints;
3. more ambitiously, the supplier groups could establish a global forum on international technology transfers and export restraints, seeking a "North-South" consensus on how proliferation could be constrained while civil development is fostered; and
4. supplier nations could bias their development aid in favor of nations that comply with nonproliferation and export control regimes.<sup>49</sup>

In attempting to better inform developing nations about the purposes and effects of export controls, the industrialized countries would have to take care to avoid the appearance of simply dictating their own views of the proliferation problem and how to deal with it. As noted earlier in this chapter, some nations perceive economic discrimination even when the facts suggest otherwise. Considerable diplomacy may be required to gain an open-minded hearing for factual presentations.

Formally conditioning development aid on nonproliferation compliance could also offend developing nations' sensitivities. International development assistance programs might have a difficult time politically in deciding what degrees and kinds of proliferation or nonproliferation behavior by what nations should lead to larger or smaller aid allocations.<sup>50</sup>

The United States, for its part, might have difficulty reconciling its other foreign aid objectives with the nonproliferation objective. It is one thing to reduce assistance as a sanction for certain proliferation behavior; it would be another to reallocate aid given to some nation for one purpose (say, supporting Israel and Egypt to bolster Middle East stability) to some other nation as a reward for cooperation on nonproliferation.

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<sup>48</sup>Lewis Dunn in Harald Müller and Lewis A. Dunn, *Nuclear Export Controls and Supply Side Restraints: Options for Reform* (Southampton, UK: Programme for Promoting Nuclear Nonproliferation, Study Number Four, October 1993), p. 28.

<sup>49</sup>Harald Müller, *ibid.*, pp. 15-16.

<sup>50</sup>For a discussion of attaching policy conditions to foreign assistance, see Nicole Ball, "Levers for Plowshares: Using Aid To Encourage Military Reform," *Arms Control Today*, vol. 22, No. 9, November 1992, pp. 11-17.